

waterline of its deepest ballast condition; and

(iii) Has an automatic stop valve that is actuated by a cargo monitor signal, except that manual valves may be provided on new vessels of less than 4,000 tons deadweight and on existing vessels.

(c) An above waterline discharge point is not required on an existing vessel if its fixed piping system meets Paragraphs 3 and 4 of Appendix E of this part.

(d) Each tank vessel under § 157.09, § 157.10a, or § 157.10b that carries crude oil must have:

(1) Equipment that drains each cargo pump and oil piping line of oil residue;

(2) Oil piping lines for the draining of oil residue from cargo pumps and other oil piping lines to a cargo tank or a slop tank; and

(3) An oil piping line that meets paragraph (f) of this section and is connected to the cargo discharge piping on the outboard side of the manifold valves for the draining of oil residue from cargo pumps and other oil piping lines to a receptacle on the shore.

(e) Each tank vessel under § 157.10 must have:

(1) Oil piping lines that are designed and installed to minimize oil retention in those lines;

(2) Equipment that drains each cargo pump and oil piping line of oil residue;

(3) Oil piping lines for the draining of oil residue from cargo pumps and other oil piping lines to a cargo tank or slop tank; and

(4) An oil piping line that meets paragraph (f) of this section and is connected to the cargo discharge piping on the outboard side of the manifold valves for the draining of oil residue from cargo pumps and other oil piping lines to a receptacle on the shore.

(f) Each oil piping line under paragraph (d)(3) or (e)(4) of this section must have a cross-sectional area of 10 percent or less of the cross-sectional area of the main cargo discharge piping line, except if the oil piping line under paragraph (d)(3) of this section is installed before January 1, 1980, that piping line may have a cross-sectional area of 25 percent or less of the cross-sectional area of the main cargo discharge piping line.

(g) Each tank vessel to which § 157.10d applies that is built under a contract awarded after September 11, 1992 must be arranged so that:

(1) Except for short lengths of completely welded (or equivalent) piping,

(i) Ballast piping and other piping to ballast tanks, such as sounding and vent piping, do not pass through cargo tanks, and

(ii) Cargo piping and other piping to cargo tanks do not pass through ballast tanks;

(2) Suction wells in cargo tanks that protrude into the double bottom are as small as practicable and extend no closer to the bottom shell plating than 0.5*h*, as specified in § 157.10d(c)(2) or § 157.10d(d)(2), as applicable; and

(3) On a vessel that is constructed and certificated for service exclusively on inland, Great Lakes, or limited short protected coastwise routes, any oil piping that is located within double hull spaces must be placed as far from the outer shell as is practicable and must be fitted with valves at the point of connection to the tank served, to prevent oil outflow in the event of damage to the piping. Such valves must be closed whenever the vessel is underway with any oil in tanks served by the associated piping, except as necessary during transfer operations.

NOTE: Piping location requirements for an oceangoing vessel are in § 157.19(d). Related operating requirements are in § 157.45.

[CGD 74-32, 40 FR 48283, Oct. 14, 1975, as amended by CGD 80-78, 45 FR 43704, June 30, 1980; CGD 77-058b, 45 FR 43708, June 30, 1980; CGD 79-152, 45 FR 82250, Dec. 15, 1980; CGD 76-088b, 48 FR 45720, Oct. 6, 1983; CGD 90-051, 57 FR 36244, Aug. 12, 1992]

§ 157.12 Cargo monitor and control system.

(a) Each vessel must have, for each type of cargo oil that it carries, at least one cargo monitor that is designed for use with that oil.

(b) Each monitor installed on a U.S. vessel must be approved under 46 CFR 162.050. Each monitor installed on a foreign vessel must be approved:

(1) Under 46 CFR 162.050; or

(2) As meeting IMO Resolution A.393(X) by a country that has ratified the MARPOL Protocol.

(c) Each monitor must be installed in accordance with Paragraphs 4, 5, and 6

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of Appendix F to this part and be fitted with the control system prescribed by paragraphs 6.1.4.2 through 6.1.4.5.5 of that appendix.

[CGD 76-088b, 48 FR 45720, Oct. 6, 1983, as amended by USCG-1998-3799, 63 FR 35531, June 30, 1998]

§ 157.13 Designated observation area.

Each new vessel must have a designated observation area on the weather deck or above that is:

(a) Located where the effluent from each discharge point and manifold described in §157.11 can be visually observed; and

(b) Equipped with:

(1) A means to directly stop the discharge of effluent into the sea; or

(2) A positive communication system, such as a telephone or a radio, between the observation area and the discharge control position.

[CGD 74-32, 40 FR 48283, Oct. 14, 1975, as amended by CGD 76-088b, 48 FR 45720, Oct. 6, 1983]

§ 157.15 Slop tanks in tank vessels.

(a) *Number.* A tank vessel must have the following number of slop tanks that comply with the requirements of this section:

(1) A new vessel of less than 70,000 tons DWT and an existing vessel must have at least one slop tank.

(2) A new vessel of 70,000 tons DWT or more must have at least two slop tanks.

(b) *Capacity.* Slop tanks must have the total capacity to retain slops from tank washings, oil residues, and dirty ballast residues of three percent or more of the oil carrying capacity, except two percent capacity is allowed if there are:

(1) Segregated ballast tanks that meet the requirements in §157.09, §157.10, §157.10a, or §157.10b; or

(2) No eductors arrangements that use water in addition to the washing water.

(c) *Design.* A slop tank required in this section:

(1) Must minimize turbulence, entrainment of oil, and the creation of an emulsion by the use of separate inlet and outlet connections; and

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(2) May carry bulk oil when not being used as a slop tank.

[CGD 74-32, 40 FR 48283, Oct. 14, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §157.15, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 157.17 Oily residue tank.

(a) A tank vessel of 400 gross tons or more must have a tank that receives and holds oily residue resulting from purification of fuel and lubricating oil and from oil leakages in machinery spaces.

(b) Each oily residue tank required in paragraph (a) of this section must have an adequate capacity that is determined by the:

(1) Type of machinery installed on the vessel; and

(2) Maximum fuel oil capacity.

(c) Each oily residue tank on a new vessel must be designed to facilitate:

(1) Cleaning; and

(2) Discharging to a reception facility.

[CGD 74-32, 40 FR 48283, Oct. 14, 1975, as amended by CGD 80-78, 45 FR 43704, June 30, 1980]

§ 157.19 Cargo tank arrangement and size.

(a) This section applies to:

(1) A U.S. or foreign vessel that is delivered after January 1, 1977;

(2) A U.S. vessel that is delivered before January 1, 1977, for which the building contract is awarded after January 1, 1972, or, if there is no building contract, the keel is laid or the vessel is at a similar stage of construction after June 30, 1972; and

(3) A foreign vessel that is delivered before January 1, 1977, for which the building contract is awarded after January 1, 1974, or, if there is no building contract, the keel is laid or the vessel is at a similar stage of construction after June 30, 1974.

(b) As determined in accordance with the procedures contained in Appendix A of this part, each cargo tank must be of such size and arrangement that:

(1) The hypothetical outflow for side damage (O_s) or for bottom damage (O_b) anywhere within the length of the vessel must not exceed O_A (30,000 cubic meters or $(400) \times (3\sqrt[3]{\text{DWT}})$ whichever is